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| **TB CARE I**

Cambodia

Year 1

Annual Report

October 1, 2010 – September 30, 2011

October 28, 2011

Table of Contents

Executive Summary	4
Introduction	7
Universal Access	9
Laboratories	11
Infection Control	13
Programmatic Management of Drug Resistant TB (PMDT).....	14
TB/HIV	15
Health System Strengthening (HSS).....	16
Monitoring & Evaluation, Surveillance and OR.....	17
Financial Overview	19

List of Abbreviations

ACF	Active case finding
CATA	Cambodia Anti-TB Association
C-DOTS	Community based directly observed treatment, short course
CENAT	National Center for Tuberculosis and Leprosy Control
DOTS	Direct Observation TB Treatment, Short course
DW	DOT Watcher (community volunteer)
FHI 360	FHI 360 (previously Family Health International or FHI)
GDP	General Department of Prisons
HC	Health Center
HIV	Human Immunodeficiency Virus
HSS	Health System Strengthening
IC	Infection Control
JATA	Japan Anti-TB Association
KNCV	Netherlands Tuberculosis Foundation
MDR-TB	Multi-drug resistant TB
MSH	Management Sciences for Health
NAP	National AIDS Program
NCHADS	National Centre for HIV, AIDS and Dermatology Services
NGO	Non-Governmental Organization
NTP	National TB Program
OD	Operational District
OR	Operational Research
M&E	Monitoring and Evaluation
MoH	Ministry of Health
MoI	Ministry of Interior
PMU	Program Management Unit (for TB CARE I, based at KNCV office at The Hague)
PMDT	Programmatic Management of drug-resistant TB
QI	Quality Improvement
SMS	Short Message Services
TA	Technical Assistance
TB	Tuberculosis
TB CAP	Tuberculosis Control Assistance Program
TBCTA	Tuberculosis Coalition for Technical Assistance
USG	United States Government
USAID	US Agency for International Development
WHO	World Health Organization

Executive Summary

TB CARE is one of the main global mechanisms for implementing United States Agency for International Development (USAID)'s TB strategy. It is a 5-year program (2011-2015) aimed at building and expanding upon previous USAID programs, particularly the Tuberculosis Control Assistance Program (TB CAP). The overall goal of TB CARE is to halve TB prevalence and death rates in USAID-assisted countries by 2015 relative to the 1990 baseline, consistent with the Global Plan to STOP TB.

In Cambodia, TB CARE I is implemented by five members of the Tuberculosis Coalition for Technical Assistance (TBCTA) consortium namely FHI360 (previously called FHI), Japan Anti TB Foundation (JATA), the Netherlands TB Foundation (KNCV), Management Sciences for Health (MSH), and the World Health Organization (WHO), with JATA assigned as the lead partner. Three of the five partners – FHI360, JATA and WHO- have local offices in Cambodia, and the main TB CARE I office is based at the National Center for TB and Leprosy Control (CENAT). Overall management of the TB CARE I Cambodia project is by the core team from FHI360, JATA and WHO who are based in Cambodia, with back stopping support from the PMU/KNCV and respective HQ offices as required. The team, led by the Chief of Party (CoP)/Project Director from FHI360, is responsible for overall leadership, management and successful implementation of the project in Cambodia.

With an obligated amount of around US\$ 1.7 million from USAID for 2011 (APA1), the TB CARE I program in Cambodia was launched in January 2011. Overall guiding principles for implementing TB CARE I in Cambodia are:

- To align with the National Strategic Plan for TB Control 2011-2015 and USAID TB strategy
- Focus on technical assistance (TA) at the national level, and through collaboration with other USAID funded TB partners wherever possible
- Introduce innovations and implement pilots/demonstration projects introducing the new diagnostic technologies and concepts
- Scale up initiatives piloted/introduced through previous TB CAP project

Typically, each of the TB CARE I partner implements activities related to their interests or areas of expertise to add value to overall implementation of the project. Geographic coverage differs between activities/technical areas, so given the diversity of the technical areas under the project; large part of the country is covered by one or more activities. Highlights of the TB CARE I achievement in 2011, focused on the seven technical areas are summarized below.

Universal and Early Access

- Active case finding: Guidelines and Standard Operating Procedure for active case finding (ACF) drafted. In collaboration with NTP and International Organization for Migrants (IOM), TB CARE I initiated ACF for TB among irregular migrants who are deported through Poipet (a border district between Cambodia and Thailand) after being detained in detention camps in Thailand.
- Expansion of childhood TB pilot sites to five additional operational districts (ODs) completed to cover a total of 9 operational districts. During July-Aug 2011, 2784 children suspected with TB were referred to the referral hospitals for complete diagnostic workup including clinical examination, tuberculin skin test, and x-ray based on the NTP guidelines. Of those referred, 23 % (636/2784) were diagnosed as TB cases and registered for treatment.
- TB/HIV services in prisons expanded to three new sites. Including the four existing sites, a total of seven prisons are now offering TB/HIV services with support from TB CARE I.
- A web based SMS alert system for delivery of lab test results to Health Centres (HC) and DOT watchers (DW)/community volunteers has been developed with technical assistance from InSTEDD. Use of this technology is likely to decrease the time for relay of lab results to HCs, and through the inclusion of DW in the network where possible, aid in earlier initiation of treatment for diagnosed TB patients.
- In collaboration with Cambodia Anti-TB Association (CATA), TB CARE I carried out a formative qualitative assessment of CATA's TB control programme in 17 garment factories around Phnom Penh with the objective of identifying strengths and weaknesses of the current implementation. The assessment showed acceptance of the project by both the factories and the Health Centres

but also indicated the need to address barriers to prevention, diagnosis and treatment of TB in the workplace.

- TB CARE I participated in meetings and contributed to the revision of Integrated Management of Childhood Illnesses (IMCI) guidelines. For the first time, the IMCI guidelines for Cambodia will include TB and HIV in the protocol.

Laboratories and improved diagnosis

- TB CARE I provided technical assistance for the first draft of the national TB lab strategic plan which is being updated to facilitate introduction of new diagnostic tools in the context of a national lab plan.
- Completed procurement of two Genexpert machines and cartridges, and trainings for its use.
- Draft algorithm for Genexpert and proposed revision of recording and reporting forms to include information on Genexpert has been shared with partners. Since several partners are planning to introduce the machine, it will be finalized by the lab technical working group to facilitate standardization across partners.
- Pilot expansion of LED microscopy network: Following trainings for lab technicians conducted in June 2011, 9 provinces have started using LED fluorescence microscopy
- Following expansion to one additional province this year, 46 ODs in nine provinces are now implementing diagnostic capacity improvement activities.
 - During April-September 2011, 1,681 smear negative TB suspects were referred from health centers to referral hospitals for further evaluation. Of those, 43% (727/1681) were diagnosed as smear negative TB cases.
 - Central team supervisors from CENAT cross check x-ray film reading made by referral hospital TB physicians. The agreement rate between CENAT expert reader and referral hospital doctor increased from 85% in April-June 2011 to 89 % in July-Sept 2011, significant improvement from the baseline of 80%.
 - Results of the quality of smear slides prepared by HC staff based on the criteria adopted for this assessment are: good quality of sputum collection - 73.1%; good smear size - 83%; good smear thickness - 58%; and good evenness to 48%.
- One digital x-ray was procured and placed at CENAT. Radiologists at CENAT have started using the machine from this quarter, initially for patients availing of services at CENAT hospital. Full scale implementation and evaluation will be conducted in 2012.
- Percentage of laboratories with over 95% correct smear microscopy results in TB CARE I supported sites (83 labs in 9 provinces) was 78% in April-June 2011 and 77.5 % in July-Sept 2011, improvement from the baseline of 76%.

Infection Control

- Training materials for TB-Infection Control developed for use together with 3 of the 12 existing training modules on general infection control. 82 participants (25 Female) attended the series of trainings for 37 Health Centres organized in Kg Cham in August and September 2011. Topics covered during the trainings were hand hygiene, waste management, TB-IC, and Personal Protection Equipment
- Communications strategy for TB -IC developed and a branded logo ("Saksit", which means effectiveness/blessing in Khmer) for the initiative designed and tested. Pretesting of the brand as well as key messages has also been completed.

Programmatic Management of drug-resistant TB (PMDT)

- TB CARE I assisted in development of the PMDT guidelines and PMDT expansion plan for the NTP. Joint supervisory visits to around 60% of the MDR-TB treatment sites were conducted and feedback provided to all partners during the MDR-TB technical working group meetings. TB CARE I, also supported several rounds of trainings in Aug-Sep 2011

TB/HIV

- The uptake of HIV testing among TB patients continued to increase and reached 81% during the first two quarters of the NTP report (Jan-June 2011) This is a significant increase from 13% in 2006 when the initiative began to 70% in 2009, and 81% for the two most recent quarters for which data is available.

Health Systems Strengthening

- TB CARE I team successfully supported the country to mobilize more than US 1 million for 2011-2012 from TBREACH/WHO for active case finding among high risk groups.
- In early 2011, Ministry of Health issued a ban on import and sale of anti-TB drugs of dubious quality from the for-profit sector. TB CARE I partners had been advocating for such a ban for several years.
- TB CARE I advocated for and assisted CENAT in establishment of the childhood TB technical working group (TWG) that met for the first time in May 2011

M&E, Operational Research, and surveillance

- TB CARE I introduced the e-TB manager system to NTP and partners, and conducted an assessment of the feasibility for implementing e-TB manager in Cambodia. It was recommended to pilot the e-TB manager tool in three MDR-TB treatment sites with reliable unlimited internet access for PMDT
- In June 2011, TB CARE I organized and facilitated a consultative workshop attended by 38 participants (F=6, M=32) from CENAT and representative of 16 organizations to develop an operational research agenda on TB for the next 5 years

As often happens at the beginning of a project, several activities particularly procurement of goods and recruitment of staff took time delaying start of some activities. Also during the year (2011), NTP staff was occupied with the ongoing national TB prevalence survey, thus joint activities such as supervision, NTP peer-review, and annual mass screening of prisoners had to be planned around the existing schedule for of the prevalence survey.

However, implementation picked up significantly towards the later part of the year and by September 2011, 82% of planned activities were completed. A no-cost extension till December 2011 has been approved and achievements during this year may be more evident after that.

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Introduction

Cambodia has the second highest TB incidence and mortality rates in Asia and is one of the 22 high TB burden countries worldwide. The 2009 national HIV sero-prevalence among TB patients survey showed further decline at 6.4%, though a significant decline from a peak of 11.8% in 2003, it still constitutes a significant TB/HIV co-epidemic. Multi-drug resistant TB (MDR-TB) is not yet a major problem in Cambodia. However, the second drug resistance survey (DRS) conducted in 2007 shows 3.5% MDR-TB in new cases and 10.3% in re-treatment cases, indicating an increase from the first survey (2001) result of 0/638 (0%) of MDR in new cases and 3/96 retreatment cases (3.1%).

The national TB programme (NTP) has achieved significant improvement in the TB situation in the country having achieved full DOTS coverage in 2004, and sustaining treatment success rates of over 90% for the past 12 years. In 2010, the NTP notified 41,628 cases of TB (all forms) and achieved a treatment success rate of 95%. The National Centre for Tuberculosis and Leprosy Control (CENAT), under the Ministry of Health, is coordinating TB activities in the country. The country is administratively divided into 24 provinces and further on into 184 districts. In terms of health care provision, the 24 provinces are divided into 77 Operational Districts (OD).

TB CARE I is one of the main global mechanisms for implementing the United States Agency for International Development (USAID) TB strategy as well as contributing to TB/HIV activities under the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). It is a 5-year program aimed at building and expanding upon previous programs, particularly the Tuberculosis Control Assistance Program (TB CAP 2005-2010),

The over arching elements of TB CARE I are:

Collaboration and Coordination
Access to TB Services for All People
Responsible and Responsive Management Practices
Evidence-based project M&E

The overall goal of TB CARE I in Cambodia is to contribute to the NTP goal of halving TB prevalence and death rates in Cambodia by 2015 (relative to the 1990 baseline), consistent with the Global Plan to STOP TB. It builds on achievements of the previous TB CAP project which started operations in Cambodia in 2007.

With an obligated amount of around 1.7 million USD from USAID for 2011, the TB CARE I program in Cambodia was launched in January 2011. Overall guiding principles for implementing TB CARE I in Cambodia are:

- To align with the National Strategic Plan for TB Control 2011-2015 and USAID TB strategy
- Focus on technical assistance (TA) at the national level, and through collaboration with other USAID funded TB partners wherever possible
- Introduce innovations and implement pilots or demonstration projects introducing the new diagnostic technologies and concepts
- Scale up initiatives piloted or introduced through previous TBCAP project

Five members of the Tuberculosis Coalition for Technical Assistance (TBCTA) consortium namely FHI 360 (previously called FHI), Japan Anti TB Foundation (JATA), the Netherlands TB Foundation (KNCV), Management Sciences for Health (MSH), and the World Health Organization (WHO) are involved in the TB CARE I Cambodia project. JATA has been assigned as the lead partner for the project in Cambodia. Three of the five partners – FHI360, JATA and WHO- have local offices in Cambodia, and the main TB CARE I office is based at the National Center for TB and Leprosy Control (CENAT). Overall management of the TB CARE I Cambodia project is by the core team from FHI 360, JATA and WHO who are based in Cambodia, with back stopping support from the PMU/KNCV and respective HQ offices as required. The team, led by the Chief of Party (CoP)/Project Director from FHI 360, is responsible for overall leadership, management and successful implementation of the project in Cambodia.

Universal and Early Access

Technical Outcomes

Expected Outcomes		Outcome Indicators	Indicator Definition	Baseline	Target Y1	Result Y1	Comments
1	Improved access for high risk populations	Increase coverage of prisons	N and % of TB patients reported in prisons among the total number of prisoners in project sites	101/3453 (3%)	>4%	95/4805 (1.98%)	Figures based on passive case finding only. Expected to pick up once annual mass screening of inmates is conducted. This could not be done during the reporting period.
2	Earlier diagnosis	Promote earlier diagnosis through decrease in turn around times for lab results	Average duration from sputum collection at Health Centres to receipt of lab results	Not available	<5 days	Not yet available	SMS system development and trainings completed but actual use of the system will start in Oct/Nov 2011.

Key Achievements

- Active case finding: Guidelines and Standard Operating Procedure for active case finding (ACF) drafted. In collaboration with NTP and International Organization for Migrants (IOM), TB CARE I initiated ACF for TB among irregular migrants who are deported through the Poipet (a border district between Cambodia and Thailand) after being held in detention camps in Thailand.
- Childhood TB: Expansion of childhood TB pilot sites to five additional operational districts (ODs) completed to cover a total of 9 operational districts (Kg Cham, Sampov Meas, Battambang, Mongkol Borei, Moug Russey, Ochrov, Preah Net Preah, Kg Speu and Prey Veng). During July-Aug 2011, 2784 children suspected with TB were referred to the referral hospitals for complete diagnostic workup including clinical examination, TST, x-ray based on NTP Childhood TB guideline. Of those referred, 23% (636/2784) were diagnosed as TB patients and registered for treatment.
- TB/HIV services in prisons: In collaboration with General Department of Prisons (GDP), as well as the TB and HIV/AIDS programme, expansion to three new prisons sites (Kg Speu, Koh Kong and Kg Som) was completed in July 2011. Including the four existing sites (Kg Cham, CC3, Kandal and Takeo), a total of seven prisons are now offering TB/HIV services with support from TB CARE I.
- Quality Improvement (QI): Following the Quality Improvement (QI) workshop conducted with external technical assistance in May 2011, two QI objectives identified during the workshop were selected for implementation - to increase identification and referral of TB suspects to public health facilities by private providers and community volunteers. Preparatory activities including a stakeholder workshop, formation of QI structure and team, site selection, root cause analysis and change ideas for improvement have been finalized. QI measurement tools are being finalized to aid monitoring of progress and for use in monthly learning sessions and reporting. Following completion of the "P" of the PDSA (Plan, Do, Study, Act) cycle for QI, full implementation will begin during the second year of the project
- SMS project to reduce turn around time for lab results: With technical assistance from InSTEDD, a not for ICT corporation with office in Cambodia, a web based SMS alert system for delivery of lab test results to Health Centres (HC) and DOT watchers (DW)/community volunteers has been developed for testing two operational districts (Kg Cham and Chamkar Leu). By end of October, all 4 TB labs in Chamkar Leu and Kg Cham OD, 15 HCs linked to these labs and select DOT watchers/community volunteers linked to these HCs are expected to start using the SMS system. This is likely to decrease the time for relay of lab results to HCs, and through the inclusion of DW in the network where possible, aid in earlier initiation of treatment for diagnosed TB patients.

- TB programme in garment factories: In collaboration with Cambodia Anti-TB Association (CATA), TB CARE I carried out a formative qualitative assessment of CATA's TB control programme in 17 garment factories around Phnom Penh with the objective of identifying strengths and weaknesses of the current implementation. The assessment showed acceptance of the project by both the factories and the Health Centres who made suggestion to scale it up as they noticed the direct benefits of the programme on the factory workers and TB patients. At the same time, this assessment indicated the need to address barriers to prevention, diagnosis and treatment of TB in the workplace such as (i) Tackle stigma and discrimination through health education and information (ii) Provide time for health education (ii) Reduce lengthy laboratory testing and results at the HC (iii) Promote treatment adherence through DOTS (iv) Address mobility issues particularly frequent turnover of factory health staff.
- TB CARE I participated in meetings and contributed to the revision of Integrated Management of Childhood Illnesses (IMCI) guidelines coordinated by the Department of Communicable Disease Control, Ministry of Health. For the first time, the IMCI guidelines for Cambodia will include TB and HIV in the protocol. In addition, TB CARE I advocated for and assisted CENAT in establishment of the childhood TB technical working group that met for the first time in May 2011

Challenges and Next Steps

- Annual mass screening of prison inmates could not be conducted during the reporting period as the mobile team (x-ray and lab team from CENAT) was fully occupied with the ongoing national TB prevalence survey. Partly for the same reason, the target for case finding in prisons could not be met. This activity is now planned for Oct-Nov 2011
- Challenges related to prisons include systematic entry screening for all new inmates, discharge planning for inmate due for release prior to completion of treatment, and concerns about ongoing transmission given the crowded settings in most prisons. TB CARE Is working with GDP and partners to include specific questions on TB in the health screening form for new inmates and currently renovating the old health post in CC3 prison to isolate infectious TB patients. In addition to annual mass screenings, TB-infection control is included in health education sessions and adequate quantities of surgical masks/respirators are supplied to all prisons.
- Limitation of existing diagnostic tools for childhood TB makes it difficult to make an accurate diagnosis, with a large proportion of children diagnosed with extra-pulmonary TB cases, usually cervical lymphadenitis based on clinical grounds. Due to uncertainty in ruling out an active case of TB, there is also reluctance to start INH preventive therapy. Wider availability of x-rays will also promote better diagnosis of smear negative pulmonary TB cases in children. In addition, more focus will be given to conduct systematic contact screening and introduce INH preventive therapy.
- Childhood TB suspects referred by Health Centres (HC) and DOT watchers to referral hospitals for a full diagnostic work are often unable to afford the transportation and other indirect costs involved. TB CARE I will continue to discuss with partners implementing health equity funds projects to explore how this cost can be subsidized or covered.
- There was delay in the start of the project affecting most activities. On top of that several Health Centres in the project sites are affected by the current flooding in Cambodia that started in September 2011. This adversely affected the project since we were hoping to catch up with implementation towards the end of the reporting year.
- TB CARE I has obtained approval for a no-cost extension till December 2011 and achievements during this year may be more evident after that. In addition, most of the activities will be continued in 2012.

Laboratories and improved diagnosis

Technical Outcomes

Expected Outcomes		Outcome Indicators	Indicator Definition	Baseline	Target Y1	Result Y1	Comments
1	Improved TB diagnosis with the use of new diagnostics	Number of tests	Number and percent of tests performed by GeneXpert	NA	35,000	0	Delay partly because of the intention to roll this out in the context of a national lab plan
2	Improved diagnostic capacity for smear negative TB patients	Diagnostic capacity improvement through establishments of diagnostic committees and use of digital x-rays	N and % of x-rays judged to have been read correctly by the diagnostic committees according to the expert cross reader	80%	>85%	89%	Target achieved. Expanded to one additional province covering 11/24 provinces in the country
3	Quality assurance of sputum microscopy	EQA for sputum smear microscopy	N and % of laboratories with over 95% correct results	60/79 (76%)	>85%	77.5%	Target not achieved but improvement from baseline

Key Achievements

Procurement and trainings on digital x-ray (1) and GenXpert machines (2) completed and installed at CENAT. National lab strategic plan for 2011-2015 drafted. Following approval of proposed X-pert algorithm and revised R&R forms, Xpert will be used for MDR-suspect, PLHIV and for ACF among high risk groups

- Pilot introduction of GeneXpert: Completed procurement of two Genexpert machines and cartridges, and trainings for its use. One machine is placed at the national TB reference lab at CENAT, placement for the second machine will be finalized considering other machines that are being procured with other funding sources and in sites that meet the criteria for site selection to optimize the use of the machines. Xpert will be used from October 2011 for MDR-TB suspects and other high risk groups including people living with HIV, prison inmates etc. Full scale implementation and evaluation will be conducted in 2012.
- Pilot expansion of LED microscopy network: Following trainings for lab technicians conducted in June 2011, 9 provinces have started using LED fluorescence microscopy (Siem Reap, Kg Speu, Kampot, Kep, Preah Sihanouk, Banteay Meanchey, Prey Veng, Oddor Meanchey and Kg Thom)
- National lab plan: TB CARE I provided technical assistance for the first draft of the national TB lab strategic plan which was shared and discussed within the CENAT team and partners for finalization process. Draft X-pert algorithm and proposed revision of recording and reporting forms to include information on Xpert has been shared with partners. Since several partners are planning to introduce Genexpert, it will be finalized by the lab technical working group to facilitate standardization across partners.
- Diagnostic capacity improvement: Following expansion to one additional province this year, 46 ODs in nine provinces are now implementing diagnostic capacity improvement activities. Key approaches include establishing a system for HC and C-DOTS watchers to refer smear negative suspects to the referral hospitals, provision of supplies (x-ray, TST etc) and building capacity at

the referral hospitals to perform full diagnostic work up for TB, quality assurance system for x-ray reading, establishing a system for monitoring and providing feedback on the quality of smear slides prepared by HC staff.

- During April-September 2011, 1,681 smear negative TB suspects were referred from health centers to referral hospitals for further evaluation. Of those, 43% (727/1681) were diagnosed as smear negative TB cases.
- Central team supervisors from CENAT cross check x-ray film reading made by referral hospital TB physicians. The agreement rate between CENAT expert reader and referral hospital doctor increased from 85% in April-June 2011 to 89 % in July-Sept 2011, significant improvement from the baseline of 80%.
- Results of the quality of smear slides prepared by HC staff based on the criteria adopted for this assessment are: good quality of sputum collection - 73.1%; good smear size - 83%; good smear thickness - 58%; and good evenness to 48%.
- X-ray: 21 TB physicians (F=0, M=21) were trained on advance X-ray reading skill as a part of strengthening their x-ray reading skill for smear negative TB diagnosis. One digital x-ray was procured and placed at CENAT. Radiologists at CENAT have started using the machine from this quarter, initially for patients availing of services at CENAT hospital. Full scale implementation and evaluation will be conducted in 2012.
- External quality assurance (EQA) for smear microscopy: TB CARE I supports EQA for smear microscopy in 83 labs located in 9 provinces. Slide selection and cross checking of smear slides and on-site evaluation for EQA are conducted on quarterly basis. Percentage of laboratories with over 95% correct results was 78% in April-June 2011 and 77.5 % in July-Sept 2011, improvement from the baseline of 76%.

Challenges and Next Steps

- Besides the overall delay in starting the project which delayed procurement of GeneXpert, further delays in beginning its use is because of the intention to roll this out in the context of a national lab plan to standardize the approach (primary consideration for use, diagnostic algorithm, data collection systems) across partners who are expectedly to collectively procure more than 10 Xpert instruments within 2011.
- In Year 1, one digital X-ray was procured which is now placed at CENAT so they master the use to teach radiologist at provincial referral hospitals. It is proposed to procure one more digital X-ray for placement at provincial referral hospitals to facilitate email consultation on x-ray readings by referral hospital staff with CENAT expert readers (tele-medicine), to use stored images for trainings on x-ray readings, and for easier storage of files for quality control purposes.

Infection Control

Technical Outcomes

Expected Outcomes		Outcome Indicators	Indicator Definition	Base-line	Target Y1	Result Y1	Comments
1	TB-IC measures implemented at Health Centres & Communities	HC staff trained on TB-IC	N and % of HCs with trained staff on TB-Infection Control in project areas	0/35	100%	37/37 (100%)	Achieved targets
2		HC staff screened for TB	Number and % of HCs performing annual TB screening of health care workers in project areas	0/35 Health Centres	100%	Not available	No direction from NTP for annual screening of health care workers, so not performed

Key Achievements

- Activities related to TB-Infection Control (TB-IC) during 2011 were development of TB-IC training materials, trainings on TB-IC, and development of communications strategy and materials
- A team comprising of TB-IC trainers from CENAT and TB CARE I staff developed training materials for TB-IC based on the SOP and existing slide sets. Three training courses covering 37 Health Centres from Kampong Cham was completed in August and September 2011. In total, 82 participants (25 Female) attended the training covering four modules - Hand hygiene, waste management, TB-IC, and Personal Protection Equipment (PPE)
- Scope of the trainings on TB-IC for HC staff was broadened to include 3 of the 12 general IC training modules (mentioned above), considered to be the most relevant modules for staff at HC level.
- Communications strategy for TB -IC developed and a branded logo ("Saksit", which means effectiveness/blessing in Khmer) for the initiative designed and tested. Pretesting of the brand as well as key messages has also been completed. Prior to launching, a baseline survey is planned for Y2 of TB CARE I so that the impact of this communication strategy can be measured after a period of implementation.

Challenges and Next Steps

- Health facilities are reluctant to offer annual TB screening for staff. There are no directions or guidelines from NTP to implement this activity.
- Due to initial delays in preparatory activities, actual implementation of TB-IC activities at Health Centres and monitoring of its implementation is expected to start in November 2011 and will be continued through 2012

Programmatic Management of Drug Resistant TB (PMDT)

Technical Outcomes

Expected Outcomes		Outcome Indicators	Indicator Definition	Baseline	Target Y1	Result Y1	Comments
1	Strengthen PMDT under the NTP	Number of MDR cases put on treatment	Number of MDR cases put on treatment during the calendar year	34 (2010)	80	47*	Target based on draft NTP M&E plan. Revised target for Y1 (2011) is 65. *Data reported for Jan-Sept 2011, will be updated when NTP 2011 report becomes available

Key Achievements

- TB CARE I support to Programmatic Management of Drug Resistant TB (PMDT) is mainly related to technical assistance for developing standard operational procedures (SOP) for MDR-TB, and in transitioning from NGO led pilot projects to mainstream PMDT under the national programme.
- During the year, TB CARE I assisted in development of the PMDT guidelines and PMDT expansion plan which includes organization of MDR-TB treatments sites which are linked to the culture and DST centers to cover the entire country in order to meet the targets set for the next 5 years. TB-CARE I also contributed to the SOP for specimen transport system and regularly participate in meetings of the MDR-TB technical working group.
- Joint supervisory visits were conducted to around 60% of the MDR-TB treatment sites (especially, the larger ones) several times and feedback was provided to all partners during the regular MDR-TB technical working group meetings.
- In collaboration with CENAT, TB CARE I, conducted several rounds of trainings in Aug-Sep 2011 on how to suspect and transport specimens of MDRTB suspects. Clinical trainings and review of PMDT will also be done using assistance from external expert in Dec 2011.

Challenges and Next Steps

- The transport mechanism for sputum from the patients to the single culture/DST laboratory (located in Phnom Penh) is the weakest link of PMDT now, which is preventing achievement of targets. CENAT/NTP hopes to resolve this issue soon by providing advance money to field supervisors for sputum transport. US-CDC has already provided funds for this purpose. In 2012, TB CARE I plans to provide more funds for this through Cambodia Health Committee, the NGO implementing a MDR-TB pilot project in country since 2006.

TB/HIV

Technical Outcomes

Expected Outcomes		Outcome Indicators	Indicator Definition	Baseline	Target Y1	Result Y1	Comments
1	Increased uptake of HIV testing among TB patients	HIV testing rates of TB patients	N and % of TB patients who had an HIV test result recorded in the TB register	28246/40199 (70%)	>80%	81%	NTP data from Jan to June 2011: 16466/20434=80.5%. Data will be updated when NTP 2011 report becomes available

Key Achievements

- Significant progress has been made in terms of collaboration for addressing TB/HIV co-infection. National level coordination mechanism through a technical working group involving both the TB and HIV programs as well as partners has been established, key policies and guidelines have been developed, all 77 ODs are now implementing TB/HIV collaborative activities, and the last national HIV zero-prevalence survey showed a further decline in HIV prevalence among TB patients from a high of 11.8% in 2003 to 6.4% in 2009.
- In the past years, TBCAP/TB CARE I supported clinical trainings on TB/HIV, implementation of TB/HIV collaborative activities including HIV testing of TB patients, the 2009 national sero-prevalence survey, development of the revised TB/HIV framework and SOP for the Three Is- Intensified case finding, Isoniazid preventive therapy (IPT), and Infection Control.
- During the reporting year, TB CARE I supported HIV testing of TB patients (Option 2) for about 25% of the TB cases in the country. The uptake of HIV testing among TB patients continued to increase and reached 81% during the first two quarters of the NTP report (Jan-June 2011). This is a significant increase from 13% in 2006 when the initiative began to 70% in 2009, and 81% for the two most recent quarters for which data is available.

Challenges and Next Steps

- Non-standard and unclear methods of payment of incentives and dwindling funds may risk the progress of this indicator in the future.
- Following finalization of the SOP for the Three Is, the National AIDS Program (NCHADS) and its partners started pilot projects to implement the Three Is since mid 2010. Adequate resources need to be mobilized to sustain current activities and to expand to all OI/ART sites.

Health System Strengthening (HSS)

Technical Outcomes

	Expected Outcomes	Outcome Indicators	Indicator Definition	Baseline	Target	Result	Comments
					Y1	Y1	
1	NTP partner coordination strengthened	Regular meetings of TWG held	Number of TWG meetings held	8	10	12	

Key Achievements

- TB CARE I team successfully supported the country to mobilize more than US 1 million for 2011-2012 from TBREACH/WHO for active case finding among migrants, urban poor and contacts of TB patients in 15 poorest operational districts. The team was involved in drafting of the proposal from NTP and served in the committee formed by the NTP to review and provide recommendations for all proposals submitted from Cambodia.
- In early 2011, Ministry of Health issued a ban on import and sale of anti-TB drugs of dubious quality from the for-profit sector. This would minimize development of drug resistance due to use of spurious drugs and encourage the private sector to participate more closely with the National TB Program for their TB patients. TB CARE I partners had been advocating for such a ban for several years.
- TB CARE I provides support to CENAT in most aspects of Global Fund processes particularly grant negotiations for Round 7 phase II and preparations for the upcoming Round 11. TB CARE I is assisting with financial & programmatic gap analysis, priority setting, and in writing of the Round 11 proposal itself. TB CARE I team members also serve on the review panel formed by the NTP to screen expressions of interests submitted by potential sub-recipients for round 11.
- TB CARE I advocated for and assisted CENAT in establishment of the childhood TB technical working group (TWG) that met for the first time in May 2011, and in facilitating meetings of the C-DOTS/PPM technical working group. Other TWGs- TB/HIV, laboratory, and MDR-TB- are well coordinated by CENAT and hold regular meetings. TB CARE I team is members of all the TWGs and well represented during the meetings.

Monitoring & Evaluation, Surveillance and OR

Technical Outcomes

	Expected Outcomes	Outcome Indicators	Indicator Definition	Baseline	Target	Result	Comments
					Y1	Y1	
1	Strengthened monitoring and evaluation	Peer review of the performance of the NTP in at least two provinces every quarter	Peer review of the performance of the NTP in at least two provinces every quarter	NA	4 provinces	Not yet available	Delayed. Planned to begin during extension period and continued though life of the project
2	Promote operations research	Research agenda for the NTP developed	Research agenda for the NTP developed	NA	Done	Done	

Key Achievements

- E-TB manager: A consultant from MSH/ TB CARE I visited Cambodia from 7-13 August to introduce the e-TB manager system and assess the feasibility of implementing e-TB manager. It is proposed to pilot (phase 1) the e-TB manager tool in 3 MDR-TB treatment sites with reliable unlimited internet access for MDR-TB case management and second line drug management in Cambodia. Potential sites for the pilot phase were identified during the assessment. The next steps include customization of e-TB manager for PMDT in Cambodia, speed up the development of the offline e-TB module which may be more suitable for Cambodia, and training of staff from pilot sites. CENAT and key partners need to set aside multi-year funding to support e-TB Manager implementation, finalize the DR-TB data collection and reporting tools, finalize the pilot sites and ready them for e-TB manager tool including availability of computers, staff proficient in basic computer use, and reliable internet connection.
- Two research experts from KNCV/TB CARE I visited Cambodia from 20-26 June 2011. They facilitated a consultative workshop attended by 38 participants (F=6, M=32) from CENAT and representative of 16 organizations between 22 and 25 June 2011 in Phnom Penh. The operational research agenda on TB for the next 5 years was drafted through an interactive process and discussions in which all workshop participants actively participated.
- Peer-review process for internal program evaluation: A standard protocol for use during the review, including means for conducting data quality audit, is being drafted and needs to be finalized with those who will be using the tool. This activity needs involvement of CENAT and provincial staff. Delayed because the TB CARE I M&E officer was in position only from July 2011 and also many of the key CENAT staff (with M&E responsibilities) are currently fully occupied with field work of the national TB prevalence survey so need to plan it around their availability. Planned for next quarter

Challenges and Next Steps

- Introduction of e-TB Manager for PMDT and second line drug management. This is foreseen to require two years to set up, so funding for additional years would need to be planned and secured. In addition, NTP commitment to own and maintain the system after the end of the project will be

critical to its success. TB CARE I is advocating for inclusion of budget for electronic recording and reporting system in the NTP's upcoming Global Fund Round 11 proposal

- As a next step for OR, it was recommended to develop a research committee within CENAT that includes external advisors and collaborators from partner organizations, and to assist in implementation of operational research on topics identified in the TB research agenda.
- TB CARE I relies on the NTP reports to report on many of the project indicators. NTP annual reports follow the calendar year so are typically available around March, whereas the TB CARE I annual reports are due by October of the year (around 5 months earlier). Thus it is not possible to report data for the current calendar year in the annual project reports. For indicators that rely on NTP report, figures reported are usually for Jan-June 2011 and indicated in the comments column. Calendar-year based data will be updated once the results become available.